

IN THE CLAIMS:

1. (Currently amended) A liquid trap ~~(10), in particular~~ for collecting liquids or frozen particles in a vacuum device, comprising with a trap container (11), which has an inner space (12) and an inflow element (13), through which liquid can enter from an outer space (20) of the trap container (11) into the inner space (12) of the trap container (11), ~~characterized in that wherein~~ the inflow element (13) is formed by an inlet channel (15) in a wall (14) of the trap container (11), ~~wherein and~~ the inflow channel (15) has an inner diameter (D) with $D < 2 \text{ mm}$ and an inner length (L) with $L < 4 \text{ mm}$.
2. (Currently amended) The liquid trap according to claim 1, in which the inlet element ~~(13)~~ has a conically shaped outer wall, which projects in a tapered manner from the wall (14) into the outer space.
3. (Currently amended) The liquid trap according to claim 2, in which the outer wall forms an angle of less than 70° relative to the wall (14) of the trap container (11).
4. (Currently amended) The liquid trap according to claim 2 ~~or 3~~, in which the outer wall forms an angle greater than 45° relative to the wall (14) of the trap container (11).
5. (Currently amended) The liquid trap according to ~~one of the preceding claims~~ claim 1, in which the diameter (D) is selected to be in the range of $1 \text{ }\mu\text{m}$ to 1 mm .
6. (Currently amended) The liquid trap according to claim 1 ~~5~~, in which the diameter (D) is selected to be in the range of $5 \text{ }\mu\text{m}$ to $100 \text{ }\mu\text{m}$.
7. (Currently amended) The liquid trap according to ~~one of the preceding claims~~ claim 1, in which the length (L) of the inlet channel (15) is less than two times the ~~doubled~~ diameter (D).
8. (Currently amended) The liquid trap according to ~~one of the preceding claims~~ claim 1, in which a heating device (30) is provided, with which the temperature of the inflow element ~~(13)~~ is temperable.
9. (Currently amended) The liquid trap according to ~~one of the preceding claims~~ claim 1, in which a first adjusting device (40) is provided, with which the diameter (D) of the inlet channel (15) can be adjusted.

10. (Currently amended) The liquid trap according to ~~one of the preceding claims~~ claim 1, in which a second adjustment device (50) is provided, with which the position of the liquid trap in the outer space is adjustable.

11. (Currently amended) The liquid trap according to ~~one of the preceding claims~~ claim 1, in which the inflow element (13) ~~represents~~ is an exchangeable component.

12. (Currently amended) A vacuum device (60) comprising : with
a vacuum chamber (61),
a liquid source (62), with which liquid can be supplied into the vacuum chamber (61),
and
a liquid trap (10, 63) according to ~~one of the preceding claims~~ claim 1 through 10.

13. (Currently amended) The vacuum device (60) according to claim 12, in which the liquid trap can be set as a module in a wall of the vacuum chamber.

14. (Currently amended) The vacuum device (60) according to claim 12 ~~13 or 14~~, which includes a plasma Röntgen source, a mass spectrometric analytical device, or a device for molecular distillation.

15. (Currently amended) The vacuum device (60) according to ~~one of claims~~ claim 12 to 14, which has an adjustment device (68), with which the liquid source (61) and the liquid trap (62) can be aligned relative to one another.

16. (Currently amended) A method for collecting a liquid in drop-, jet-, or particle form with a predetermined radius (R) in a vacuum device (60) with a vacuum chamber (61) and a liquid trap (10), which has a trap container (11) with an inner space (12) and an inflow element (13), through which the liquid enters from the vacuum chamber (61) into the inner space (12) of the trap container (11) and vapor of the liquid flows from the trap container (11) into the outer space, comprising the steps of:

collecting a liquid ~~characterized in that~~ liquids with a radius (R) in the range of 1 μm to 100 μm and a vapor pressures in the range of 1 kPa to 100 kPa are collected, and

moving the liquid ~~is moved~~ through an inlet channel (15), which is formed by the inflow element (13) and having an inner diameter (D) with $D < 20R$ and an inner length (L) with $L < 2D$.

17. (Currently amended) The method according to claim 16, in which the flow of a gas atmosphere, which surrounds the liquid before collection, is reversed upon entry of the liquid into the inlet channel ~~(15)~~ by a conical outer shape of the inflow element ~~(13)~~.

18. (Currently amended) The method according to claim 16 ~~or 17~~, in which the inflow element ~~(13)~~ is heated at least at the beginning of the collection of the liquid.

19. (Currently amended) The method according to ~~one of the preceding claims~~ claim 16 ~~through 18~~, in which the liquid is collected in the liquid trap at ambient temperature.

20. (Currently amended) The method according to ~~one of the preceding claims~~ claim 16 ~~through 19~~, in which the liquid is collected after an irradiation for plasma-based production of Röntgen radiation or after separation from a substance to analyze in a mass-spectrometry analytical device.